

ABSTRACT OF THE DISCLOSURE

A method of operating a phosphoric acid fuel cell is provided, in which the phosphoric acid fuel cell effects power generation at a high output. A power-generating cell is provided with an electrolyte layer comprising a matrix composed of basic polymer impregnated with acidic liquid electrolyte such as phosphoric acid. The phosphoric acid fuel cell has a fuel cell stack comprising a single unit of the power-generating cell or a predetermined number of the power-generating cells electrically connected in series to one another. When the phosphoric acid fuel cell is operated, the supply pressures of the oxygen-containing gas and the hydrogen-containing gas are set so that the pressure on a cathode electrode of the power-generating cell is higher than that of an anode electrode.